that he was no longer troubled with lachrymation. The opposite eye was now done in precisely the same style.

II. ECTROPIUM: TREATMENT: SUBSEQUENT NECESSITY OF OPERATION FOR THE DISPLACED PUNCTUM.

The subject of this was an elderly man. There was complete ectropium, the entire tarsal border being turned out, although not very much depressed. As is usual, all of the exposed conjunctiva was swollen, red, and much altered in structure. The operation which Mr. Walton has introduced for this is the removal of all the diseased conjunctiva by a clean and neat dissection. He made an incision through the membrane close along the tarsal margin, and by another circumscribed what he intended to remove. The isolated piece was then dissected off, just in the manner described for the removal of a small bit of conjunctiva in the above case. In two months, the lid was tucked up in as well as could be desired, and the cicatrix had apparently reached its maximum contraction. But the excretory apparatus was yet deranged; the lower punctum was not brought into play. The contiguous parts, by which we mean the tissues immediately around the canaliculus, were so altered that the required adaptation could not be effected. Mr. Walton then slit up the canaliculus, that the secretions might be conveyed directly to the lachrymal duct, generally a most efficient remedy in these cases, when properly done. A stiff probe, of an appropriate size, was passed through the punctum to the sac, and the canaliculus divided on it with a knife. Some after treatment is here required, for the divided channel should be inspected; and, if closed, as in all probability it will be the day after, the probe should be introduced, and the incision reopened with this instrument alone—a matter that is most readily accomplished. Here it was requisite to do this but once, but it may be requisite to repeat it. Mr. Walton declared the result to be as good as in any instance that he had watched.

BRISTOL ROYAL INFIRMARY.

SUGAR AND DIABETES: A CASE.

By William Budd, M.D., Senior Physician to the Infirmary.

[*Read before the Bath and Bristol Branch,* Sept. 24th*, 1857.]

There are probably few whose attention has been much directed to the subject of diabetes, who have not had misgivings, at one time or another, as to whether the common method of treating this disease by restricting the patient to a purely nitrogenous diet, or, to speak more correctly, to a diet from which sugar and its equivalents are excluded, really fulfils the true indications of the case.

Among the many circumstances that might be referred to as suggesting such misgivings, there comes—

1. The strong and direct opposition in which this method very often stands to the natural cravings of the patient—cravings which, if not indulged, become, after a time, in many instances, so irresistible as to drive the subjects of them to fraud, in default of other means, in order to procure some portion of the proscribed articles.

It has even been laid down as essential to the success of this method, when conducted in hospital, that the patient should be kept in a room to himself, guarded by lock and key for that special purpose, so ineffectual have any less stringent measures been found to bar the diabetic man from the gratification of his desire for saccharine aliments.

The need of such precautions as these is in itself sufficient to raise serious doubts in the mind of any thoughtful practitioner, as to the soundness of the principle on which they are founded. For, although the appetites in disease are often perverted, and are rarely to be unreservedly trusted as guides to practice, yet they are often, as in health, exponents of true wants of the system. In some sense or other, they are very real elements of the case, whatever it may be, and not seldom are much more intimate interpreters of its great cardinal relations than any evidence we may be able to draw from more recondite sources. Their suggestions may require to be modified by the results of experience, or may even be superseded by a higher knowledge; but, in either case, we ought to be very sure of our facts before we venture to act upon them in contravention of strongly declared instincts. In diabetes, it would be difficult to show in either of these quarters sufficient warrant for the little heed which is paid to the natural desires of the patient in the all-important matter of diet. We are certainly very far from having attained, on the one hand, to a perfect theory of the disease; and our experience as to diet, on the other, is too one-sided to enable us to found any certain conclusions upon it.

2. Another circumstance that tends very much to weaken faith in what may be called the orthodox plan of treatment is, that this plan is not only of little avail in most cases in long postponing the fatal event, but often signally fails in insuring for any length of time the specific object for which it is proposed—that, namely, of keeping down the quantity of sugar discharged with the urine.

3. M. Bernard's important discovery, that the liver forms sugar as readily from nitrogenous as from amylaceous compounds, seems to take from this plan the plea of resting upon a scientific basis.

I am aware of all that may be said in reply to these observations, and I also know that they are open to cavil in various ways; but they sufficiently show, notwithstanding, as it appears to me, that the true principles on which the dietetic treatment of diabetes should be conducted are still open to consideration. We shall see how far this view is borne out by evidence of another kind, to be presently adduced.

Many of the points here touched on are illustrated in a very striking way in a paper on *Diabetes* communicated to the French Academy of Sciences by Professor Andral, rather more than two years ago, and published soon afterwards in the *Annales des Sciences Naturelles*. After remarking that a purely animal diet not only fails in a great number of cases permanently to reduce the amount of sugar discharged by the kidney, but that this amount may even go on steadily increasing, in spite of the entire exclusion of saccharine and amylaceous compounds from the food, M. Andral relates the following case in point:—

"One of the most remarkable, and at the same time one of the most conclusive, of facts of this kind, because of the absolute strictness with which the regimen was carried out, is that of a woman who, in the intimate persuasion that an exclusive animal diet could alone cure her, had the courage to subject herself to it during nearly two months, without deviating from it for a single day. During the whole of this time she ate nothing but roast or boiled meat, and drank nothing but water to which a little alcohol had been added. At the end of the two months, she was obliged to give up this regimen, which had become insupportable to her; and, besides, she was not better. At the moment of commencing this plan, her urine yielded 27 *grammes* of sugar to the pint. During the early trial of it, the proportion of sugar fell by degrees to 20, 15, 12, and at last to as low as 10 *grammes* to the pint; then suddenly, and without the remotest ground for supposing that any breach of rule had occurred, the proportion of sugar voided began again to rise. We now saw it progressively mount from 10 to 15, 20, 30, 44, 49 *grammes* to the pint; and there was, moreover, no single day in which this principle was altogether absent. Further, what is particularly worthy of remark, is that, when we first began to mix eggs, milk, a small quantity of bread, and vegetables, with the meat, and to substitute wine and water for the alcohol and water, the sugar, contrary to all expectation, began to diminish anew, falling to 30, 26, and at length to 10 *grammes* to the pint. Then again, after the lapse of some days, the regimen remaining unchanged, the sugar rose once more, until, at the end of three weeks from the first adoption of this mixed diet, the urine contained 54 *grammes* to the pint."

M. Andral adds, that this is far from being the only instance in which he has seen a large amount of sugar continue to be discharged in the urine in this disease, in spite of a purely animal diet; and he cites, among others, the extreme case of a diabetic patient "who lived entirely on flesh, and whose urine contained, notwithstanding, the enormous quantity of 82 *grammes* of sugar to the pint; and, as this man passed eight pints of urine every twenty-four hours, it follows that he expelled from his system, and consequently produced in the same period of time, as much as 656 *grammes* (or more than 20 ounces) of sugar."

In the case of which it is the principal purpose of this paper to give some account, the same general fact was observed. The amount of sugar voided went on largely and steadily in-

* In preparing this communication for the press, one or two minor details have been added, which, for the sake of brevity, were omitted in the original draught.

creasing, in spite of the rigid observance of a diet from which sugar and amylaceous compounds were excluded. But this case exhibited, in addition, the much more remarkable spectacle of a considerable and permanent reduction in this amount occurring concurrently with the recovery of the patient from a state of wasting and extreme weakness to one of good condition and comparative health, on substituting for this diet a scheme which not only included a large proportion of vegetable food, but *more than half a pound daily of sugar in substance.*

CASE. The subject of this case, Joseph Snailum by name, an agricultural labourer, 18 years old, was admitted on March 19th, 1857, into Ward 6 of the Bristol Royal Infirmary, where he still remains under observation. At that time, he had already been fifteen months ill. As in most cases of the kind, his malady had stolen insensibly upon him. Frequent calls to make water, by night and day; an unnatural thirst, together with loss of flesh and gradually increasing weakness, were the first circumstances that excited his attention. He had been unable to work almost from the beginning. Meanwhile, these complaints had gone on gradually increasing. For some time before he fell ill, he had been working in wet and marshy ground; but, apart from this, he could assign no distinct cause for his failing health. His immediate relatives appear to have been healthy people.

On admission, his state was very characteristic. A peculiarly dry and harsh skin, a brown and dry tongue, ardent thirst, and a voracious appetite, were the leading symptoms. The pulse was only 68 in the minute. He was much reduced in flesh and strength. For the first week, the quantity of urine passed varied from nine to twelve and a half pints; its specific gravity, from 1039 to 1042. The presence of sugar in the urine was ascertained by the copper test, and by the extraction of sugar in bulk from the secretion. Within a few days after his admission, he was put on a diet consisting entirely of meat, eggs, a carefully prepared diabetic bread, a small quantity of butter, and a few ounces of wine. Under this regimen, contrarily to what usually happens, the diabetic symptoms began to grow worse almost from the first. The quantity of urine passed rose, in the course of a week, from nine to seventeen pints, its specific gravity remaining much the same. The patient's thirst increased, and he became daily thinner and weaker. At the end of that time, an attack of diarrhœa occurred, which lasted, with more or less severity, very nearly ten days. During that interval, he took very little food, and the precise amount of urine passed could not be estimated. When the bowels had become settled, he was found to be voiding from seven to ten pints of urine *per diem*, of specific gravity ranging from 1036 to 1044.

On March 31st, the stomach rebelled so much against the diabetic bread, that six ounces of common bread were allowed in place of it; and these six ounces were soon afterwards raised to sixteen. His health now began to improve somewhat, and he gained a little in flesh and strength. The diabetic symptoms proper remained much as before.

This improvement, however, was not of long continuance. In the beginning of May, he had grown so weak as to be obliged to keep his bed, and I had become very anxious about him. His tongue was very dry and brown; his pulse had become frequent; and he was much harassed by cough and pain in the chest. He seemed, in fact, to be rapidly entering upon the downward course which leads to the fatal event so common in such cases.

Many considerations which I have not now time to detail, but some of which have already been hinted at, had long made me desirous of trying what would be the effect of freely giving sugar in such circumstances.* I was turning the matter in my mind, when I accidentally saw it stated in the *Gazette Médicale* that M. Piorry had already tried this measure in one case with very marked success. I therefore, on May 22nd, entirely reversed my plan of treatment, and ordered the patient to be put on a varied and generous diet, with the addition of eight ounces of sugar candy and four ounces of treacle daily. This change had very little effect at first either on the quantity of urine passed or on its specific gravity. It is worthy of remark, however, that what little there was was in both respects on the side of diminution. But the effect on the general health was marked and immediate. The new articles of diet were taken with great relish, and the patient improved in health and strength from day to day. What is especially worthy of attention is, that, as he became stronger, the diabetic symptoms also gradually lessened—to such a point, indeed, that on July 22nd, exactly two months after the adoption of the new scheme, only three pints of urine, of specific gravity 1032, were passed in the twenty-four hours; and yet, at this very time, the patient was taking, in addition to much vegetable food, as much *as eight ounces of sugar and six of honey daily;* the honey having been substituted, at his own desire, for the treacle previously given. Since that time, the quantity of urine passed has somewhat risen, its present daily average being from four to five pints, of specific gravity varying from 1032 to 1034. In other respects, his state is very satisfactory. He is ruddy, looks in very good condition, and declares himself to be strong and well. His tongue is moist; he no longer suffers from thirst; and his skin, from being dry and harsh in the extreme, has become soft and natural. He has increased in weight from 107 lbs., which was what he weighed shortly before beginning the sugar treatment, to 126½ lbs.

P.S. I have purposely abstained from burdening this narrative by any lengthened comments. There are few maxims in philosophy which are entitled to more respect than that which inculcates caution in drawing deductions from single instances. The striking result here obtained from this new mode of treating diabetes must not only be repeated in other cases of the same kind, but must be sustained for a longer period in this one, before any general inferences can be safely founded upon it. It will be observed, that the effect of the treatment was to palliate only, and not to cure. The patient is still diabetic, and may still, for all I know, die, as so many have done before him, of the disease under which he is labouring. But even although it does not go beyond palliation, I have thought the result sufficiently important to deserve being placed on record. That a diabetic man should not only recover his health by eating sugar, but that his diabetic symptoms should also very nearly vanish under the same treatment, is a fact that stands in startling antagonism to all present views, as well as all prior experience on the subject. If this result should be found to be general, it will not only lead to an entire revolution in the treatment of the disorder, but will help in no mean degree to clear up much that is still obscure in its pathology.

* This idea was first suggested to me by my colleague Mr. Prichard, on the simple ground of supplying to the system the particular article which is running to waste, and the loss of which appears to be the principal cause of the damage sustained by the constitution as the disease advances.

Original Communications.

REMARKS UPON THE TREATMENT OF THREATENED APOPLEXY AND HEMIPLEGIA.

By THOMAS INMAN, M.D., Liverpool.

I HAVE long entertained great doubt whether the ordinary proceedings recommended in cases of threatened apoplexy and in certain forms of hemiplegia, were those most conducive to the patient's speedy recovery. Few can read Dr. Abercrombie's work on the brain, without concluding that the means adopted to arrest the disease, or to cure it when present, frequently had a very opposite tendency; and few can calmly examine the ordinary plan laid down for the treatment of cerebral hæmorrhage, without feeling that it is more dogmatic than rational. An individual who has had hæmorrhage into the brain and recovered from the first shock, is, as far as the effused blood is concerned, precisely in the position of a person who has ecchymosis. The blood has to be absorbed in both cases by a slow process; and as we cannot expedite the removal of blood effused by a bruise by the use of mercury, so we ought not to expect to do it in another part when effused from a different cause. If apoplexy is to be warded off, and if hemiplegia is to be cured, the only rational plan to follow seems to be, to consider the powers of the system and to act accordingly. I beg to give the following cases as contributions to medical science, with a view to assisting others to work out the same problems on which I am myself engaged.

CASE I. Mrs. J., aged 45, stout and florid, and a tolerably large feeder, complained of pain in the head, confusion, and frequent attacks of vertigo. These came on from walking up hill or upstairs, from suddenly turning the head, or moving round a corner. She had never fainted. The bowels were costive; the tongue clean; pulse 80, natural. Quiet and tonics were recommended; and nothing more. Ten years have since elapsed, and she had a great many repetitions of the same set of symptoms; but experience has shown that the attacks